

WINDSHIELD STOP FOR COWL VENT GRILLE ATTACHMENT

BACKGROUND OF THE INVENTION

A windshield stop, such as is disclosed in U. S. Patent No. 5,214,824, issued to Hans-Jurgen Lesser, et al on June 1, 1993, is used to support the lower edge of a windshield on an automobile. Such a windshield stop is well known in the automotive industry and is used by multiple manufacturers. The sole function of this disclosed windshield stop is to support the lower edge of the automobile windshield. No other automobile structure is known to be attached to the windshield stop.

In U. S. Patent No. 4,679,845, issued to Heinz Detampel on July 14, 1987, the windshield is adhesively secured to the body of the automobile with the lower edge of the windshield extending below the adhesive connection. A windshield cowl plate is formed with a groove that receives the lower edge of the windshield and is also mounted to the body structure to hide the engine compartment from view.

In U. S. Patent No. 5,692,953, issued to Mary Bell on December 2, 1997, and in U. S. Patent No. 6,213,541, issued to Paul S. Razgunas on April 10, 2001, the cowl assembly is depicted as incorporating a screen or grill portion that is connected to the underlying cowl member in a manner to permit limited relative movement therebetween. In Bell, a push pin connects the cowl member and the cowl screen to permit

relative movement. In U. S. Patent No. 5,522,636, issued to Theodore Kolar, Jr. on June 4, 1996, an elastomeric member is pinned to the cowl assembly and engages the lower edge of the windshield. This member is not supportive of the lower edge of the windshield and also does not support any other structural component of the automobile, including the cowl.

In U. S. Patent No. 4,758,039, issued to Tsuneyoshi Ohhazama on July 19, 1988, and in U. S. Patent No. 4,304,075, issued to Masakazu Miyoshi on December 8, 1981, a molding holder for engaging the lower edge of an automotive windshield is disclosed. In neither reference is the molding holder used to support a separate automotive component.

Accordingly, it would be desirable to provide an improvement to the windshield stop device presently in known use within the automotive industry to support the lower edge of a windshield to support a separate component, such as the cowling grille.

#### SUMMARY OF THE INVENTION

It is an object of this invention to overcome the aforementioned disadvantages of the known prior art by providing a windshield stop that has been formed to provide a support for a cowl grille assembly when in position to engage and support the lower edge of the windshield.

It is another object of this invention to improve the known windshield stop with an integral support member that can be used to attach to a cowl grille assembly next to the windshield.

It is a feature of this invention that the windshield stop has a cowl attachment member that will receive a push pin for mounting a cowl grille assembly thereto.

It is an advantage of this invention that packaging constraints of the automobile structure are resolved by designing the windshield stop to provide a mounting point for the cowl vent grille.

It is a further object of this invention to provide a windshield stop member for supporting the lower edge of a windshield and for mounting a cowl assembly on an automobile that is durable in construction, inexpensive of manufacture, carefree of maintenance, facile in assemblage, and simple and effective in use.

These and other objects, features and advantages are accomplished according to the instant invention by providing a windshield stop that is operable in a conventional manner to support the lower edge of an automotive windshield while the adhesive material mounting the windshield to the body of the automobile cures, and is also operable to provide an attachment of the cowl grille assembly covering the gap between the windshield and the hood of the automobile. The windshield stop has a cowl mounting portion integrally formed with the finger supports for the windshield. An opening through the cowl mounting portion can receive a conventional push pin to attach the cowl grille assembly to the windshield stop and provide a fixed support therefore.

## BRIEF DESCRIPTION OF THE DRAWINGS

The advantages of this invention will become apparent upon consideration of the following detailed disclosure of the invention, especially when taken in conjunction with the accompanying drawings wherein:

Fig. 1 is a top plan view of the windshield stop incorporating the principles of the instant invention;

Fig. 2 is a side elevational view of the windshield stop depicted in Fig. 1;

Fig. 3 is a upper perspective view of the windshield stop with a representative portion of a windshield being shown in phantom;

Fig. 4 is a lower perspective view of the windshield stop depicting the underside of the cowl mounting portion;

Fig. 5 is a perspective view of the underside of a automobile cowl assembly showing the windshield stop in position supporting the lower edge of the windshield and mounting the cowl assembly, portions of the windshield and cowl grille assembly being broken away for purposes of clarity; and

Fig. 6 is a perspective view of the top side of the cowl grille assembly depicted in Fig. 5 mounted to the windshield stop against the windshield.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Figs. 1 - 6, a windshield stop incorporating the principles of the instant invention can best

be seen. The windshield stop 10 is of the type described in U. S. Patent No. 5,214,824, issued to Hans-Jurgen Lesser, et al on June 1, 1993 and incorporates a plurality of fingers 12 projecting outwardly from a base portion 13 to be positionable for supporting the lower edge of the windshield W at a desired orientation while the adhesive (not shown) securing the windshield W to the body of the automobile cures. The windshield stop 10 is also formed with a mounting tab 15 that is insertable into an appropriate opening in the body of the automobile to mount the windshield stop 10 at an appropriate location for supporting the lower edge of the windshield W.

The base portion 13 of the windshield stop 10 is also formed with a rigid cowl mounting bracket member 20 that is oriented to mate with the cowling assembly 25 when the windshield stop 10 is mounted on the body of the automobile. An opening 22 extends transversely along substantially the entire width of the bracket member 20 on the top surface 23 thereof. The opening 22 is sized to receive a conventional push pin 30 to secure the cowling 25 to the windshield stop 10. The top surface 23 is shaped to register with the cowling assembly 25 for a secure attachment of the cowling member 25 on the windshield stop 10. The cowl mounting bracket 20 extends from said base portion 13 in the opposite direction from the extension of said finger members 12 with said mounting tab 15 being located between the finger members 12 and the cowl mounting bracket 20.

Thus, the windshield stop 10 provides a secondary function of providing a mounting support for the cowling C in addition to the primary function of supporting the lower edge of the windshield W. Utilization of the windshield stop 10 for this secondary function eliminates the need for the body or chassis of the automobile to be re-designed to require a mount for the attachment of the cowling 25 and provides a consistent and substantial location for the attachment of the cowling assembly 25. The cowl mounting portion 20 of the windshield stop 10 further provides strength and rigidity for the windshield stop 10 in support of the primary function for the stop 10 in supporting the windshield W.

It will be understood that changes in the details, materials, steps and arrangements of parts which have been described and illustrated to explain the nature of the invention will occur to and may be made by those skilled in the art upon a reading of this disclosure within the principles and scope of the invention. The foregoing description illustrates the preferred embodiment of the invention; however, concepts, as based upon the description, may be employed in other embodiments without departing from the scope of the invention.